DL, et al. Perioperative effects of alpha-stat versus pH-stat strategies for deep hypothermic cardiopulmonary bypass in infants. J Thorac Cardiovasc Surg 1997;114:991-1001.

3. Miyamoto TA, Hosoi N, Chiba T, Shibata S, Saito H, Wakusawa R. The effects of the "ideal Pco_2" on the hemodynamics during surface induced hypothermia (in Japanese). Nihon Kyobu-Geka Gakkaishi (J Jpn Assoc Thorac Surg) 1970;18:45-6.

[Response declined]

12/8/97600

Coronary artery bypass grafting with the descending branch of the lateral femoral circumflex artery used as an arterial conduit: Is arteriographic evaluation necessary before its use?

To the Editor:

We read with interest the recent paper by Schamun and associates[1] regarding the use of the descending branch of the lateral femoral circumflex artery (LFCA) as an arterial conduit for myocardial revascularization[2] (Fig 1). We thoroughly agree with them because our clinical experience correlates with theirs. Since October 1997, the descending branch of the LFCA has been used as graft material in 24 patients who underwent coronary artery bypass grafting in our institution. In all cases, bilateral saphenous veins either were absent owing to bilateral stripping or were not suitable as graft material owing to varicose dilatation or fibrotic lesions. Twenty patients were men and 4 were women with a mean age of 65 ± 5 years (range 52-81 years). One patient in whom the descending branch of the left LFCA was used to revascularize the circumflex artery underwent redo coronary artery bypass grafting 1 month later because of a significant stenosis distal to the anastomosis of the left internal thoracic artery (ITA) to the left anterior descending artery (LAD). The descending branch of the right LFCA was then used to revascularize the LAD distal to the stenosis. The descending branch of the

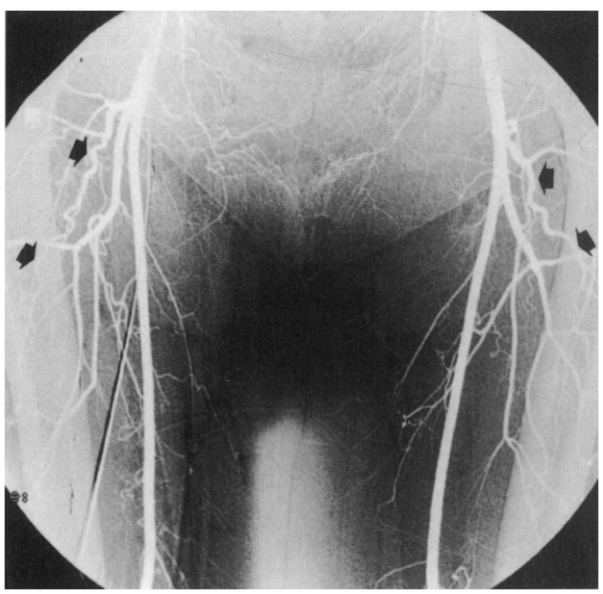

Fig 1. Bilateral femoral arteriography showing the adequately developed descending branch of the lateral femoral circumflex artery on both sides *(black arrows).*

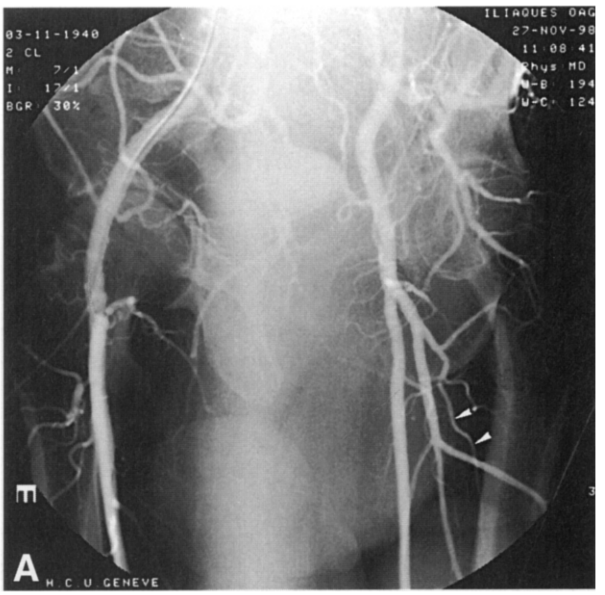

Fig 2A. The poorly developed descending branch of the left lateral femoral circumflex artery *(white arrowheads).*

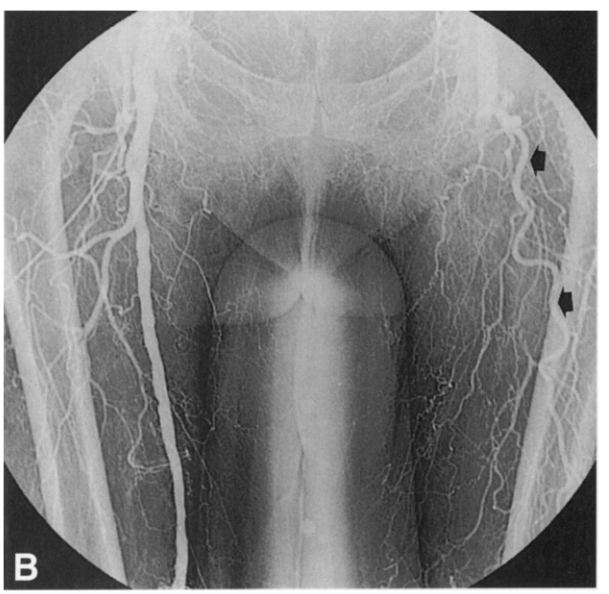

Fig 2B. The well-developed descending branch of the left lateral femoral circumflex artery *(black arrows)* contributing to the collateral circulation of the limb in the presence of occlusive lesions of the left superficial femoral artery and the deep femoral artery after the origin of the lateral femoral circumflex artery.

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LFCA was anastomosed on the right coronary artery in 10 cases, the first marginal branch of the circumflex artery in 5, the first diagonal branch in 5, the LAD in 3, the intermediary artery in 1, and the posterior descending artery in another case. In 21 cases, proximal anastomoses of the descending branch of the LFCA were carried out on the ascending aorta, and in 4 cases they were carried out either on the pedunculated right ITA or left ITA, forming a Y-shaped graft. The average length of the descending branch of the LFCA was 16 cm (range 14-20 cm). Clinical follow-up was complete for all patients with a mean follow-up of 8 months (range 2-26 months). One patient who was operated on on an urgent basis with an ejection fraction of 20% died of irreversible left ventricular failure on the fifth postoperative day. A postoperative coronary angiogram was repeated in 4 patients, and in only 1 of them was the descending branch of the LFCA found to be occluded. The other patients continue to be followed-up by periodic treadmill tests and remain clinically free of symptoms. During the beginning of our experience with the descending branch of the LFCA, we observed that this artery was unsuitable for use in some cases. The presence of a poorly developed artery (Fig 2A) and of macroscopic atheromatous lesions in the artery itself preclude its harvesting. For these reasons, we considered it necessary to perform bilateral femoral arteriography before surgery, during coronary angiography, for patients in whom the use of the descending branch of the LFCA might be justified. Arteriographic evaluation provided further information on the anatomic variations of this artery such as the LFCA arising from the common femoral artery or a hypoplastic LFCA being sometimes replaced by small branches taking their origin from the deep or superficial femoral arteries. The anatomy of the LFCA can be different between the right and left sides in the same person. Moreover, radiologic evaluation allows the detection of some occlusive or stenotic lesions of the superficial femoral arteries for which the descending branch of the LFCA contributes to the collateral circulation of the limb (Fig 2B). Histopathologic examination of the harvested descending branches of the LFCA revealed that this artery can contain macroscopically occult atheromatous lesions, sometimes even with microscopic calcified deposits, which could result in earlier occlusion of the graft after the operation.

In conclusion, although we totally agree with the conclusions reported by the authors regarding this new arterial conduit, we would like to emphasize the importance of a preoperative bilateral arteriographic evaluation of the femoral arteries and that of LFCAs, as we systematically do for thoracic arteries. We believe that this evaluation can avoid useless attempts at harvesting. Attractiveness of the descending branch of the LFCA as an arterial conduit will depend on its patency rate in the long term and the enthusiasm of surgeons to use it.

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REFERENCES

1. Schamun CM, Duran JC, Rodriguez JM, et al. Coronary revascularization with the descending branch of the lateral circumflex artery as a composite arterial graft. J Thorac Cardiovasc Surg 1998;116:870-1.
2. Tatsumi TO, Tanaka Y, Kondoh K, et al. Descending branch of lateral femoral artery as a free graft for myocardial revascularization: a case report. J Thorac Cardiovasc Surg 1996;112:546-7.

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A successful treatment of serous leakage from a polytetrafluoroethylene Blalock-Taussig shunt with intravenous fibrinogen administration

To the Editor:

Occasionally, excessive serous fluid leakage occurs as a complication after the modified polytetrafluoroethylene (PTFE) Blalock-Taussig (B-T) shunt. The estimated frequency of this complication is reported as approximately 20%,[1,2] but the mechanism is not clearly defined. We present a case of serous leakage through a modified B-T shunt treated with intravenous fibrinogen administration and describe our hypothesis about the role of fibrinolysis in this problem.

A 3-year-old boy (11.5 kg) with single right ventricle and pulmonary stenosis was admitted for the treatment of cyanosis and exercise intolerance. A blood test revealed polycythemia with a hemoglobin level of 20.8 g/dL. We decided not to proceed directly to a Fontan procedure because of the lack of direct measurement of pulmonary arterial pressure and pulmonary vascular resistance (the catheter did not go through the narrow ventricular outflow tract). As a preparation for a Fontan-type procedure, the boy underwent a left modified B-T shunt with a 5-mm PTFE shunt. Anticoagulation was initiated on the first postoperative day with a continuous heparin infusion (200 units/kg per day; Novo Heparin, Hoechst Marion Roussel, AG, Frankfurt, Germany) and an oral administration of ticlopidine hydrochloride (5 mg/kg per day; Panaldine, Dai-Ichi, Inc, Tokyo, Japan). On the third postoperative day, the chest tube drainage increased appreciably and the anticoagulation therapy was discontinued. The drainage continued for more than a week, with excessive serous fluid losses averaging 700 mL daily. The blood test revealed a marked decrease in total plasma protein (4.2 g/dL) and plasma fibrinogen (93.6 mg/dL) levels. The massive leakage continued and plasma protein and fibrinogen did not increase despite the infusion of packs of frozen plasma. We administered fibrinogen (heated and freeze-dried human fibrinogen; Fibrinogen HT, Yoshitomi, Inc, Osaka, Japan) intravenously, 200 mg/kg per day, for 2 days. The leakage stopped instantly and the fibrinogen level increased to more than 300 mg/dL. The chest tube was removed and the patient was discharged after a catheterization. Anticoagulation therapy was never resumed.

Three weeks later, the boy was readmitted with dyspnea, chest pain, and increasing cyanosis. A chest x-ray film revealed a massive pleural effusion on the left side, and a